
U.S. Department of the Interior • U.S. Geological Survey

MINERAL INDUSTRY SURVEYS

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COBALT IN DECEMBER 1996

Based on monthly reports, U.S. consumption of cobalt in 1996 was basically the same as consumption during 1995, according to the U.S. Geological Survey (USGS). Cobalt stocks reported by U.S. consumers and processors were 8% lower in December 1996 than in December 1995, and U.S. Government stocks of cobalt decreased 10% during the year. U.S. imports of cobalt metal and cobalt contained in chemicals during January through November 1996 were slightly higher than imports during the first 11 months of 1995. Exports of unwrought cobalt and cobalt contained in chemicals were 28% higher in January through November 1996 than during the same period in 1995. Trade data for December will be available in a subsequent issue.

Note

With the exception of prices, all data in this report have been rounded to no more than three significant digits. Totals and percentages were calculated using unrounded data. Domestic data on U.S. cobalt consumption and stocks are developed by the USGS from voluntary surveys of U.S. operations. The data in tables 1 through 3 contain estimates to account for nonrespondents and are subject to revision.

Update

The next sale of cobalt from the National Defense Stockpile is scheduled for February 20, 1997. On that date, approximately 500 tons (1.1 million pounds) of cobalt will be offered under a negotiated sale format. The cobalt is primarily in the form of granules and rondelles and ranges in grade from 97.0% to 98.9% cobalt. For further information, please contact June Olmstead, DLA's contracting officer for cobalt, at (703) 767-5492.

Price update, dollars per pound of electrolytic cobalt
(Source—Platt's Metals Week):

<u>Week ending</u>	<u>Price range</u>
Jan. 24	21.25-22.25
Jan. 31	21.25-22.25
Feb. 7	20.50-21.80

Monthly average

January
21.73

TABLE 1
U.S. REPORTED CONSUMPTION OF COBALT MATERIALS 1/

(Metric tons, contained cobalt)

Period	Metal 2/	Oxide and other chemical compounds 3/	Scrap	Total
1995:				
December	250	137	130	517
January-December 4/	3,200	1,690	1,540	6,430
Year 5/	3,660	1,800	1,540	7,000
1996:				
January	291	145	132	569
February	265	148	124	537
March	279	129	133	541
April	268	129	125	522
May	295	136	128	560
June	259	135	136	530
July	261 r/	151	129	542
August	292	136	132	559
September	277	133	136	545
October	275	138	138	550
November	267 r/	126	136	529 r/
December	279	136	135	549
January-December	3,310	1,640	1,590	6,530

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes metal powder.

3/ Data may include other cobalt materials.

4/ Data based on monthly reports.

5/ Includes annual reports.

TABLE 2
U.S. REPORTED CONSUMPTION OF COBALT, BY END USE 1/

(Metric tons, contained cobalt)

End use	1995		1996	
	January- December 2/	Year 3/	December	January- December
Steel:				
Stainless and heat resisting	38	38	3	38
Tool	W	146	W	W
Superalloys	2,650	2,940	248	2,800
Alloys (excludes steels and superalloys):				
Magnetic alloys	698	757	57	682
Welding materials (structural and hard-facing) 4/	264	287	22	271
Other alloys 5/	59	80	13	65
Cemented carbides 6/	746	748	59	786
Chemical and ceramic uses:				
Catalysts	713	732	53	656
Driers in paints or related usage	770	770	54	680
Ground coat frit	172	172	21	230
Pigments	W	172	W	W
Miscellaneous and unspecified 7/	311	163	20	329
Total	6,430	7,000	549	6,530

W Withheld to avoid disclosing company proprietary data; included in "Miscellaneous and unspecified."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Data based on monthly reports.

3/ Includes annual reports.

4/ Includes wear-resistant alloys.

5/ Includes nonferrous alloys.

6/ Includes diamond bit matrices, cemented and sintered carbides, and cast carbide dies or parts.

7/ Includes feed or nutritive additive, full-alloy steel, glass decolorizer, mill products made from metal powder, and data indicated by the symbol "W."

TABLE 3
U.S. REPORTED STOCKS OF COBALT MATERIALS 1/

(Metric tons, contained cobalt)

	Industry 2/				U. S. Government 3/
	Metal 4/	Oxide and other chemical compounds 5/	Scrap	Total	Metal
1995:					
December 6/	323	283	103	709	20,700
Yearend 7/	390	309	103	802	20,700
1996:					
January	310	320	135	764	20,700
February	274 r/	300	150	725	20,700
March	273	702	152	1,130	20,400
April	279 r/	699	138	1,120 r/	20,100
May	258	694	138	1,090	19,800
June	234	695	99	1,030	19,600
July	251 r/	696 r/	99	1,050	19,500
August	372 8/	416 8/	96	884	19,300
September	347	299	98	744 r/	19,000
October	299 r/	260 r/	101	661 r/	18,900
November	307 r/	274 r/	102	682 r/	18,800
December	292	263	103	653	18,700

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Stocks reported by cobalt processors and consumers.

3/ Data from Defense Logistics Agency, Defense National Stockpile Center. Includes material committed for sale pending shipment.

4/ Includes metal powder.

5/ Data may include other cobalt materials.

6/ Data based on monthly reports.

7/ Includes annual reports.

8/ Data being questioned.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF COBALT, BY COUNTRY 1/

(Kilograms, gross weight of material, except as noted)

Period and country of origin	Metals 2/		Oxides and hydroxides		Salts and compounds 3/		Total cobalt content for the month 5/	Cobalt content, year to date 5/ 6/
	Quantity	Value 4/	Quantity	Value 4/	Quantity	Value 4/		
1995:								
November	259,000	\$16,200,000	58,900	\$2,780,000	98,800	\$1,350,000	328,000	6,010,000
December	411,000	25,900,000	16,300	722,000	16,000	189,000	427,000	6,440,000
January-December	5,530,000	325,000,000	808,000	34,300,000	1,170,000	15,800,000	6,440,000	XX
1996:								
January	515,000	30,000,000	53,000 7/	2,060,000 7/	276,000 7/	3,480,000 7/	627,000	627,000
February	470,000	29,900,000	57,100	2,810,000	25,600 7/	314,000 7/	519,000	1,150,000
March	540,000	36,000,000	49,800 7/	2,450,000 7/	183,000 7/	2,300,000 7/	626,000	1,770,000
April	432,000	27,500,000	147,000	6,370,000	104,000	1,340,000	566,000	2,340,000
May	457,000	27,500,000	62,100	2,730,000	55,200	786,000	515,000	2,850,000
June	606,000 7/	36,000,000 7/	82,200	3,710,000	88,800	1,170,000	689,000	3,540,000
July	571,000	33,000,000	93,900	4,440,000	60,200	778,000	655,000	4,200,000
August	480,000	24,800,000	112,000 7/	2,160,000 7/	38,600	405,000	571,000	4,770,000
September	432,000 7/	20,500,000 7/	58,600	2,440,000	101,000	954,000	502,000	5,270,000
October	347,000	17,100,000	71,000	3,030,000	101,000	1,010,000	425,000	5,700,000
November:								
Australia	--	--	--	--	--	--	--	7,440
Austria	--	--	--	--	--	--	--	195
Belgium	9,150	719,000	26,800	1,230,000	3,000	42,000	29,200	289,000
Brazil	--	--	--	--	--	--	--	36,800
Canada	87,800	4,170,000	--	--	3,590	80,700	89,400	917,000
China	--	--	--	--	--	--	--	1,250
Finland	36,900	1,610,000	10,400	400,000	84,000	785,000	66,900	1,080,000
France	2,170	197,000	989	89,200	--	--	2,880	36,600
Germany	5,050	348,000	200	17,600	--	--	5,190	89,900
Hong Kong	--	--	--	--	--	--	--	500
Japan	1,550 7/	33,800 7/	3,120	119,000	120	3,260	3,820	30,500
Netherlands	--	--	12,000	537,000	--	--	8,640	13,900
Norway	112,000	5,550,000	--	--	--	--	112,000	1,500,000
Russia	89,600 7/	2,980,000 7/	--	--	--	--	89,600	635,000
South Africa	241	28,700	--	--	--	--	241	12,700
Spain	--	--	4,830	145,000	--	--	3,480	24,200
Sweden	--	--	--	--	--	--	--	708
Switzerland	--	--	--	--	--	--	--	960
United Kingdom	--	--	2,750	99,600	--	--	1,980	98,400
Zaire	31,400	1,610,000	--	--	--	--	31,400	384,000
Zambia	105,000	4,770,000	--	--	--	--	105,000	1,090,000
Total	481,000	22,000,000	61,100	2,640,000	90,700	911,000	550,000	6,240,000

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Unwrought cobalt, excluding alloys; includes cobalt cathode and cobalt metal powder.

3/ Includes cobalt sulfates, cobalt chlorides, cobalt carbonates, and cobalt acetates.

4/ Customs value.

5/ Estimated from gross weights.

6/ Year to date may include revisions to prior months.

7/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF ADDITIONAL COBALT MATERIALS, BY COUNTRY 1/

(Kilograms, gross weight of material, except as noted)

Period and country of origin	Unwrought cobalt alloys		Other cobalt: matte, waste and scrap 2/		Wrought cobalt and cobalt articles	
	Quantity	Value 3/	Quantity	Value 3/	Quantity	Value 3/
1995:						
November	4,020	\$268,000	33,500	\$444,000	11,800	\$901,000
December	6,440	566,000	33,400	631,000	21,200	1,360,000
January-December	98,200	5,330,000	880,000	12,400,000	155,000	9,760,000
1996:						
January	5,110	414,000	30,600	452,000	10,400	563,000
February	6,560	490,000	90,900 4/	833,000 4/	16,000	651,000
March	1,340	107,000	71,200	1,370,000	21,800	1,410,000
April	3,940	213,000	48,700	954,000	19,000	1,270,000
May	3,940	326,000	52,800 4/	1,880,000 4/	19,800	1,270,000
June	2,630	108,000	10,900 4/	396,000 4/	13,800	1,070,000
July	4,380	337,000	72,300 4/	2,820,000 4/	11,500	824,000
August	8,080	313,000	84,700 4/	2,030,000 4/	10,500	676,000
September	2,310	221,000	16,800 4/	875,000 4/	12,500	878,000
October	1,330 4/	97,200 4/	48,100 4/	665,000 4/	17,500	1,020,000
November:						
Belgium	3,170	178,000	5,000	216,000	--	--
Canada	305	21,900	1,870	40,000	592	95,500
Finland	--	--	1,350 4/	96,900 4/	--	--
France	10,000	609,000	273 4/	25,600 4/	--	--
Germany	200	23,100	11,700	260,000	339	16,300
Japan	--	--	500 4/	30,800 4/	3,070	238,000
Sweden	1,360	67,500	--	--	--	--
United Kingdom	872	12,700	1,850	34,700	5,680	364,000
Total	16,000	912,000	22,600	705,000	9,680	714,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes other intermediate products of cobalt metallurgy; may include other cobalt-bearing materials from which cobalt is extracted, or from which cobalt-containing chemical compounds are manufactured.

3/ Customs value.

4/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.

TABLE 6
U.S. EXPORTS OF COBALT MATERIALS 1/

(Kilograms, gross weight of material, except as noted)

	Unwrought cobalt, powders, matte, waste and scrap 2/		Oxides and hydroxides		Salts and compounds 3/		Total cobalt content for the month 5/	Cobalt content, year to date 5/ 6/
	Quantity	Value 4/	Quantity	Value 4/	Quantity	Value 4/		
1995:								
November	72,300	\$3,260,000	11,200	\$248,000	25,700	\$416,000	86,600	1,200,000
December	71,400	4,690,000	18,600	724,000	43,200	772,000	95,300	1,300,000
January-December	898,000	49,000,000	271,000	8,850,000	860,000	7,080,000	1,300,000	XX
1996:								
January	70,200	5,050,000	31,300	889,000	34,500	788,000	101,000	101,000
February	76,700	4,750,000	20,200	642,000	42,000	510,000	101,000	202,000
March	214,000	13,000,000	29,100	1,070,000	336,000	318,000	316,000	518,000
April	168,000	9,640,000	24,300 7/	497,000 7/	15,100	132,000	189,000	707,000
May	145,000	6,930,000	22,700 7/	689,000 7/	20,500	346,000	166,000	873,000
June	159,000	7,500,000	13,300 7/	514,000 7/	20,600	310,000	173,000	1,050,000
July	61,500	2,760,000	30,100 7/	377,000 7/	21,200 7/	279,000 7/	88,300	1,130,000
August	88,700	3,160,000	40,000 7/	362,000 7/	26,600	292,000	124,000	1,260,000
September	58,200	2,370,000	35,600 7/	1,060,000 7/	47,800 7/	231,000 7/	95,400	1,350,000
October	50,000	2,380,000	15,900 7/	540,000 7/	31,900	104,000	69,100	1,420,000
November	84,000	3,510,000	27,400	777,000	78,100	316,000	122,000	1,550,000

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ May include other intermediate products of cobalt metallurgy, and unwrought cobalt alloys.

3/ Cobalt acetates and cobalt chlorides.

4/ Free alongside ship (f.a.s.) value.

5/ Estimated from gross weights.

6/ Year to date may include revisions to prior months.

7/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.

TABLE 7
U.S. EXPORTS OF WROUGHT COBALT, COBALT ORE, AND CONCENTRATES 1/

(Kilograms, gross weight of material, except as noted)

Period and country of origin	Wrought cobalt and cobalt articles		Cobalt ore and concentrates	
	Quantity	Value 2/	Quantity	Value 2/
1995:				
November	40,500	\$1,930,000	50,800	\$565,000
December	9,070	682,000	1,710	2,700
January-December	485,000	17,800,000	139,000	1,610,000
1996:				
January	38,800	1,640,000	8,050 3/	105,000 3/
February	18,300	1,630,000	5,560 3/	337,000 3/
March	24,100	2,060,000	10,900 3/	130,000 3/
April	25,400	1,890,000	21,700 3/	1,020,000 3/
May	18,800	1,460,000	19,300 3/	174,000 3/
June	62,000	2,150,000	--	--
July	28,500	1,170,000	13,400 3/	496,000 3/
August	67,100	1,660,000	43,500 3/	1,050,000 3/
September	31,000	1,780,000	56,200 3/	2,250,000 3/
October	20,600	1,420,000	30,900 3/	1,260,000 3/
November	108,000	2,610,000	8,790 3/	370,000 3/

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Free alongside ship (f.a.s.) value.

3/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.